

What is claimed:

1. A momentum lockout hinge mechanism, comprising:  
a first fixed member;  
a second member connected to said first member and movable in relation thereto;  
a pathway positioned in relationship to the first member; and  
a ball positioned for movement in the pathway from a first position thereof to a second position thereof;  
wherein the pathway extends at least partially vertically to cause the ball to move against gravity when moving from the first pathway position to the second pathway position;  
wherein the ball interferes with the movement of the first and second members when in the second pathway position.
2. The momentum lockout hinge mechanism of claim 1, also including a cam path on one of the first and second members and a cam on the other of the first and second members, wherein the cam path has a pushout section at one end and a curve out section forming in incline region at the other end, wherein the cam cooperates with each of the ends in a detent function.
3. The momentum lockout hinge mechanism of claim 2, also including a damper connected between the first and second members to diminish the relative rate of movement there between.

4. The momentum lockout hinge mechanism of claim 3, wherein the connection between the first and second member is shaped to permit a radial motion as well as a rotating motion.
5. The momentum lockout hinge mechanism of claim 4, wherein the cam path and cam operation establish a first closed extreme position for the two members and a second open extreme position.
6. The momentum lockout hinge mechanism of claim 5, wherein when in the closed position the ball is in non-interference to the movement of the first and second members, and wherein when the momentum lockout hinge mechanism is subjected to a shock, the ball begins to move and the second member begins to move relative to the first member, whereby the ball reaches the interference position before the second member can move sufficiently in relationship to the first member to be in the open position.
7. A method of operating a hinge mechanism for momentum lockout comprising the steps of:
  - permitting two hinge members to rotate with respect to one another, with the second member pivoting with respect to the first member under the operation of an operator from between an open and a closed positions with a pull-push open and a push-pull close operation;
  - articulating the rotation of the second member in a radial direction to the first member during the beginning portion of the rotation to open;

engaging an anti-gravity lockout member for free movement between a rest position and an interfering position wherein when in the interfering position the lockout member prohibits the rotation of the two hinge members; and

permitting the second hinge member to move from a closed position to an open position under a momentum force imparted to the hinge, and the anti-gravity member to move from a non-interfering position to the interfering position under the same imparted momentum force, whereby the anti-gravity member reaches the interfering position before the second hinge member can rotate to the open position with respect to the first hinge member.

8. The method of operation of a hinge mechanism of claim 7, also including detenting the second member with respect to the first member at the open and the closed positions.

9. The method of operation of a hinge mechanism of claim 8, also including dampening the rotational movement of the second member with respect to the first member.

10. The method of operation of a hinge mechanism 9, also including adjusting the detent force at the closed position by adjusting the angle with respect to the vector of gravity of the first member.

11. A hinge mechanism, comprising:

a first fixed arm;

a second movable arm attached to the first arm and rotatably movable in relationship thereto to define an closed position and an open position thereof at the respective extreme positions of rotation;

a channel in said fixed arm, being positioned to extend at least partly upwardly;  
and

an anti-gravity momentum member freely movable in said channel from a first channel rest position to a second channel interference position;

wherein when in said interference position, said momentum member prohibits the rotation of said second arm with respect to said first arm; and

wherein said momentum member returns to said first channel rest position under the force of gravity.

12. The hinge mechanism of claim 11, wherein said first arm and said second arm are juxtaposedly positioned for scissor-like rotational movement relative there between, and wherein said momentum member is an anti-gravity ball, and wherein said first arm includes a cam slot defining a cam follower path, and wherein said second arm includes a cam extending from the juxtaposed face thereof into said cam slot of said first member.

13. The hinge mechanism of claim 12, wherein said second arm is pivotally attached to said first arm, said pivotal attachment having an elongated opening permitting a radial movement of said second arm with respect to said first arm.

14. The hinge mechanism of claim 13, wherein said cam slot is curvilinear, and said hinge mechanism also includes a damper member operating between said first and second arms for modifying the rotational rate of motion.

15. The hinge mechanism of claim 14, wherein said cam slot includes a detent shape at each end thereof, said cam cooperating with the detent shape at each end of said

cam slot to hold a detented position at said open and closed rotated positions of said arms.

16. The hinge mechanism of claim 15 also including a biasing spring connected between said first arm and said second arm, said spring biasing said extreme positions to hold said open and closed rotated positions of said arms.

17. The hinge mechanism of claim 16, wherein said damper member includes a curvilinear toothed track on said first arm and a rotatable pinion gear on said second arm, said pinion gear engaging said curvilinear toothed track, and wherein said pinion gear is connected to a clutch dampener.

18. The hinge mechanism of claim 17, wherein said second arm includes a fork shaped end with an elongate slot, and wherein said second arm includes a heel slot at the opposite end of said arm from said fork shape end, said heel slot operating as the pivot boss for said second arm.

19. The hinge mechanism of claim 18, wherein said first arm has a lobed journal, said lobed journal co-acting with said pivot boss to add an abutment function at said extreme rotated positions.

20. The hinge mechanism of claim 19, wherein said first arm and said second arm each carry an abutment shoulder juxtaposedly extending towards said other arm, each said abutment shoulder having a concave cutout, said respective cutouts engaging said momentum ball at said interference position.